

It is claimed:

1. A mobile device, comprising:

a memory subsystem;

a processing subsystem coupled to the memory subsystem and operable to store and retrieve data in the memory subsystem and to execute instructions stored in the memory subsystem; and

a memory management module stored in the memory subsystem and executed by the processing subsystem and comprising instructions operable to cause the mobile device to allocate a maximum amount of available data storage memory in the memory subsystem for storing data for each of a plurality of software applications loaded on the mobile device;

the memory management module being further operable to automatically detect that additional data storage memory is needed for an executing software application, select one of the plurality of software applications for memory clean-up, and delete data from the data storage memory allocated to the selected software application in accordance with a pre-established memory retention policy for the selected software application.

2. The mobile device of claim 1, wherein the memory management module is further operable to decrease the maximum amount of available data storage memory for the selected software application and proportionally increase the maximum amount of available memory for the executing application.

3. The mobile device of claim 1, further comprising:

a memory allocation and retention table stored in the memory subsystem and maintained by the memory management module, the memory allocation and retention table identifying the maximum amount of available storage memory for each of the plurality of software applications.

4. The mobile device of claim 3, wherein the memory allocation and retention table identifies the memory retention policy for the selected software application.
5. The mobile device of claim 4, wherein the memory allocation and retention table identifies a memory retention policy for each of the plurality of software applications.
6. The mobile device of claim 1, wherein the memory management module is further operable to allocate a minimum amount of available data storage memory in the memory subsystem for storing data for each of the plurality of software application;
wherein the memory management module prevents the maximum amount of available memory for each of the plurality of software applications from being decreased below the allocated minimum amount of available data storage memory.
7. The mobile device of claim 1, wherein the memory management module automatically detects that additional data storage memory is needed for an executing software application by determining that an amount of stored data in the data storage memory for the executing software application has reached a pre-established memory threshold value for the executing software application..

8. The mobile device of claim 1, wherein the memory management module selected one of the software applications for memory clean-up according a pre-established priority level of the selected software application.

9. A method of managing memory in a mobile device, comprising:

allocating a maximum amount of available data storage memory for each of a plurality of software applications loaded on the mobile device;

automatically detecting that additional memory is needed for an executing software application;

selecting one of the software applications for memory clean-up;

deleting data from the data storage memory allocated to the selected software application in accordance with a pre-established memory retention policy for the selected software application; and

if the selected software application is different than the executing software application, then decreasing the maximum amount of available memory for the selected software application and proportionally increasing the maximum amount of available memory for the executing software application.

10. The method of claim 9, further comprising:

allocating a minimum amount of data storage memory for each of the plurality of software applications loaded on the mobile device; and

preventing the maximum amount of available memory for the selected software application from being decreased below the allocated minimum amount of data storage memory for the selected software application.

11. The method of claim 9, further comprising:

establishing a memory threshold value for the executing software application; and automatically detecting that additional memory is needed for the executing application by detecting that an amount of stored data in the data storage memory for the executing software application has reached the memory threshold value.

12. The method of claim 9, wherein the software application selected for memory clean-up is selected according to a priority level.

13. The method of claim 9, further comprising:

determining a memory retention target for the selected software application; and deleting data from the data storage memory allocated to the selected application until an amount of data remaining in the data storage memory location is at or below the memory retention target.

14. The method of claim 9, further comprising:

determining if sufficient memory is available for the executing application; if sufficient memory is not available for the executing application, then selecting another of the software applications for memory clean-up.

15. A mobile device, comprising:

a memory subsystem for storing data from a plurality of software applications;

means for allocating a maximum amount of memory in the memory subsystem available to store data from each of the plurality of software applications;

means for automatically detecting that additional memory is needed for an executing software application;

means for selecting one of the plurality of software applications;

means for deleting data from the memory allocated to the selected software application in accordance with a pre-established memory retention policy; and

means for decreasing the maximum amount of memory allocated to the selected software application and proportionally increasing the maximum amount of available memory for the executing software application.